

## When it comes to putting, Tiger and Nicklaus might not have best advice

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Tim Lee, professor in the Department of Kinesiology. Photo by Chris Martin

Golfers who heed the advice of instructors to keep their heads perfectly still while putting may be hampering their game, according to a study that examined coordination patterns. The research appears in the July issue of the *Journal of Motor Behavior*.

Tim Lee, professor of kinesiology at McMaster University and a golfer himself—says the findings run contrary to conventional wisdom, or at least conventional golf wisdom.



"Jack Nicklaus says the premier technical cause of missed putts is head movement; Tiger Woods believes that even a fraction of head movement can throw a putting path off course," says Lee. "Therefore, it would seem that based on what the experts say good putters keep their heads absolutely still from start to finish."

The putting stroke is used more frequently than any other during a round of golf, regardless of skill. In 2007, putts represented 41.3 per cent of total strokes taken by members of the PGA tour, and 40 percent for members of the LPGA.

Lee and his team assembled two groups of golfers: one group comprised 11 volunteers, aged 21 to 56, and with a handicap range of 12 and 40; and another group of professional and low-handicap golfers, aged 24-52.

Using an infrared tracking system, researchers recorded the putter head and the golfer's head during sixty putts.

Surprisingly, both expert and less-skilled golfers moved their heads about the same amount during the execution of putts. The big difference was in the direction: less-skilled golfers moved in an allocentric direction – moving their head in the same direction and timing as the motion of the putter; the expert golfers moved in a tightly coupled but egocentric direction – moving their head in the opposite direction as the putter, but timed similarly to reverse when the putter reversed.

"The exact reasons for the opposite coordination patterns are not entirely clear," says Lee. "However, we suspect that the duffers tend to just sway their body with the motions of the putter. In contrast, the good golfers probably are trying to maintain a stable, central body position by counteracting the destabilization caused by the putter backswing with a forward motion of the head. The direction of head motion is then reversed when the putter moves forward to strike the ball."



"These coordination patterns are similar to the fundamental coordination patterns that we use to move our upper and lower limbs every day," Lee adds. "So, from one viewpoint, the findings are very consistent with other research. The findings are just not consistent with what most golf instructors believe to be true".

Source: McMaster University

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